

=====

Sequence Listing could not be accepted due to errors.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: [year=2008; month=3; day=10; hr=17; min=27; sec=1; ms=990; ]

=====

\*\*\*\*\*

Reviewer Comments:

<210> 2

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> immunomodulatory oligonucleotide

<220>

<221> misc\_feature

<222> (11)..(11)

<223> n is any naturally occurring or synthetic nucleotide except c

<220>

<221> misc\_feature

<222> (12)..(12)

<223> n is any naturally occurring or synthetic nucleotide except g

<400> 2

tgactgtgry nnyyagagat ga

22

Please change the <210> and <400> responses to "298," since this is the last sequence in the submitted file. It appears after Sequence 297.

\*\*\*\*\*

Application No: 10524643 Version No: 3.0

**Input Set:****Output Set:**

**Started:** 2008-02-25 18:22:13.496  
**Finished:** 2008-02-25 18:22:15.927  
**Elapsed:** 0 hr(s) 0 min(s) 2 sec(s) 431 ms  
**Total Warnings:** 298  
**Total Errors:** 1  
**No. of SeqIDs Defined:** 298  
**Actual SeqID Count:** 298

Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (1)
W 213	Artificial or Unknown found in <213> in SEQ ID (2)
W 213	Artificial or Unknown found in <213> in SEQ ID (3)
W 213	Artificial or Unknown found in <213> in SEQ ID (4)
W 213	Artificial or Unknown found in <213> in SEQ ID (5)
W 213	Artificial or Unknown found in <213> in SEQ ID (6)
W 213	Artificial or Unknown found in <213> in SEQ ID (7)
W 213	Artificial or Unknown found in <213> in SEQ ID (8)
W 213	Artificial or Unknown found in <213> in SEQ ID (9)
W 213	Artificial or Unknown found in <213> in SEQ ID (10)
W 213	Artificial or Unknown found in <213> in SEQ ID (11)
W 213	Artificial or Unknown found in <213> in SEQ ID (12)
W 213	Artificial or Unknown found in <213> in SEQ ID (13)
W 213	Artificial or Unknown found in <213> in SEQ ID (14)
W 213	Artificial or Unknown found in <213> in SEQ ID (15)
W 213	Artificial or Unknown found in <213> in SEQ ID (16)
W 213	Artificial or Unknown found in <213> in SEQ ID (17)
W 213	Artificial or Unknown found in <213> in SEQ ID (18)
W 213	Artificial or Unknown found in <213> in SEQ ID (19)
W 213	Artificial or Unknown found in <213> in SEQ ID (20)

**Input Set:**

**Output Set:**

**Started:** 2008-02-25 18:22:13.496  
**Finished:** 2008-02-25 18:22:15.927  
**Elapsed:** 0 hr(s) 0 min(s) 2 sec(s) 431 ms  
**Total Warnings:** 298  
**Total Errors:** 1  
**No. of SeqIDs Defined:** 298  
**Actual SeqID Count:** 298

Error code

Error Description

This error has occurred more than 20 times, will not be displayed

E 212

Invalid Sequence ID Number; Expected 298 as next SeqID but skipped

# SEQUENCE LISTING

<110> Garren, Hideki  
 Ho, Peggy P.  
 Steinman, Lawrence  
 Bayhill Therapeutics, Inc.  
 The Board of Trustees of the Leland Stanford Junior  
 University

<120> Methods and Immune Modulatory Nucleic Acid Compositions for  
 Preventing and Treating Disease

<130> 022259-001010US

<140> 10524643  
 <141> 2005-02-10

<150> US 60/428,643  
 <151> 2002-11-21

<150> WO PCT/US03/37157  
 <151> 2003-11-21

<160> 298

<170> PatentIn version 3.3

<210> 1  
 <211> 6  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> immunomodulatory oligonucleotide

<400> 1  
 gtggtt 6

<210> 2  
 <211> 6  
 <212> DNA  
 <213> Artificial Sequence

<220>  
 <223> immunomodulatory oligonucleotide

<400> 2  
 atggtt 6

<210> 3  
 <211> 6  
 <212> DNA  
 <213> Artificial Sequence

<220>		
<223>	immunomodulatory oligonucleotide	
<400>	3	
gcgggtt		6
<210>	4	
<211>	6	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	4	
acgggtt		6
<210>	5	
<211>	6	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	5	
gtggct		6
<210>	6	
<211>	6	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	6	
atggct		6
<210>	7	
<211>	6	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	7	
gcggct		6
<210>	8	
<211>	6	

<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	8	
acggct		6
<210>	9	
<211>	6	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	9	
gtggtc		6
<210>	10	
<211>	6	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	10	
atggtc		6
<210>	11	
<211>	6	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	11	
gcggtc		6
<210>	12	
<211>	6	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	12	
acggtc		6

<210> 13  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide

<400> 13  
gtgctt 6

<210> 14  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide

<400> 14  
atgctt 6

<210> 15  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide

<400> 15  
gcgctt 6

<210> 16  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide

<400> 16  
acgctt 6

<210> 17  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide

<400> 17  
gtgcct 6

<210> 18  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide

<400> 18  
atgcct 6

<210> 19  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide

<400> 19  
gcgcct 6

<210> 20  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide

<400> 20  
acgcct 6

<210> 21  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide

<400> 21  
gtgctc 6

<210> 22  
<211> 6  
<212> DNA  
<213> Artificial Sequence



<220>		
<223>	immunomodulatory oligonucleotide	
<400>	22	
atgctc		6
<210>	23	
<211>	6	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	23	
gcgctc		6
<210>	24	
<211>	6	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	24	
acgctc		6
<210>	25	
<211>	6	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	25	
gggggtt		6
<210>	26	
<211>	6	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	26	
agggtt		6
<210>	27	
<211>	6	

<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	27	
	gagggtt	6
<210>	28	
<211>	6	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	28	
	aagggtt	6
<210>	29	
<211>	6	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	29	
	gggggt	6
<210>	30	
<211>	6	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	30	
	aggggt	6
<210>	31	
<211>	6	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	31	
	gagggt	6

<210> 32  
<211> 6  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> immunomodulatory oligonucleotide  
  
<400> 32  
aaggct 6

<210> 33  
<211> 6  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> immunomodulatory oligonucleotide  
  
<400> 33  
ggggtc 6

<210> 34  
<211> 6  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> immunomodulatory oligonucleotide  
  
<400> 34  
agggtc 6

<210> 35  
<211> 6  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> immunomodulatory oligonucleotide  
  
<400> 35  
gaggtc 6

<210> 36  
<211> 6  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> immunomodulatory oligonucleotide

<400> 36  
aaggtc 6

<210> 37  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide

<400> 37  
gggctt 6

<210> 38  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide

<400> 38  
aggctt 6

<210> 39  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide

<400> 39  
gagctt 6

<210> 40  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide

<400> 40  
aagctt 6

<210> 41  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide  
  
<400> 41  
gggcct 6

<210> 42  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide  
  
<400> 42  
aggcct 6

<210> 43  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide  
  
<400> 43  
gagcct 6

<210> 44  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide  
  
<400> 44  
aagcct 6

<210> 45  
<211> 6  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide  
  
<400> 45  
gggctc 6

<210> 46  
<211> 6

<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> immunomodulatory oligonucleotide  
  
<400> 46  
aggctc 6

<210> 47  
<211> 6  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> immunomodulatory oligonucleotide  
  
<400> 47  
gagctc 6

<210> 48  
<211> 6  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> immunomodulatory oligonucleotide  
  
<400> 48  
aagctc 6

<210> 49  
<211> 6  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> stimulatory CpG-ODN oligonucleotide  
  
<400> 49  
aacgtt 6

<210> 50  
<211> 6  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> immunomodulatory oligonucleotide  
  
<220>  
<221> misc\_feature  
<222> (1)..(6)

<223> phosphorothioate backbone

<400> 50

aaggtt

6

<210> 51

<211> 14

<212> PRT

<213> Artificial Sequence

<220>

<223> dihydrolipoamide acetyl-transferase (E2) component of  
pyruvate dehydrogenase complex (PDC) PDC-E2 peptide  
self-antigen

<400> 51

Gly Asp Leu Leu Ala Glu Ile Glu Thr Asp Lys Ala Thr Ile

1

5

10

<210> 52

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> immunomodulatory oligonucleotide

<400> 52

tgactgtgaa ggtagagat ga

22

<210> 53

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> immunomodulatory oligonucleotide

<220>

<221> misc\_feature

<222> (13)..(14)

<223> nn is GpG or non-GpG dinucleotide

<400> 53

tgactgtgtg rrnnyyagag atga

24

<210> 54

<211> 24

<212> DNA

<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide

<220>  
<221> misc\_feature  
<222> (13)..(14)  
<223> nn is GpG or non-GpG dinucleotide

<400> 54  
tgactgtgtg rynnnyagag atga

24

<210> 55  
<211> 26  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide

<220>  
<221> misc\_feature  
<222> (1)..(10)  
<223> n is any nucleotide

<220>  
<221> misc\_feature  
<222> (13)..(14)  
<223> nn is GpG or non-GpG dinucleotide

<220>  
<221> misc\_feature  
<222> (17)..(26)  
<223> n is any nucleotide

<400> 55  
nnnnnnnnnn rynnnyynnnn nnnnnn

26

<210> 56  
<211> 26  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> immunomodulatory oligonucleotide

<220>  
<221> misc\_feature  
<222> (1)..(10)  
<223> n is any nucleotide

<220>  
<221> misc\_feature



<222> (13)..(14)  
 <223> nn is GpG or non-GpG dinucleotide  
  
 <220>  
 <221> misc\_feature  
 <222> (17)..(26)  
 <223> n is any nucleotide  
  
 <400> 56  
 nnnnnnnnnn rrnnyynnnn nnnnnn 26  
  
 <210> 57  
 <211> 26  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> immunomodulatory oligonucleotide  
  
 <400> 57  
 gggggggggg aaggttggg gggggg 26  
  
 <210> 58  
 <211> 26  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> immunomodulatory oligonucleotide  
  
 <400> 58  
 gggggggggg atggttggg gggggg 26  
  
 <210> 59  
 <211> 26  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> immunomodulatory oligonucleotide  
  
 <400> 59  
 gggggggggg acggttggg gggggg 26  
  
 <210> 60  
 <211> 26  
 <212> DNA  
 <213> Artificial Sequence  
  
 <220>  
 <223> immunomodulatory oligonucleotide  
  
 <400> 60

ggggggggggg aagcttgggg gggggg

26

<210> 61

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> immunomodulatory oligonucleotide

<400> 61

ggggggggggg atgcttgggg gggggg

26

<210> 62

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> immunomodulatory oligonucleotide

<400> 62

ggggggggggg acgcttgggg gggggg

26

<210> 63

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> immunomodulatory oligonucleotide

<400> 63

ccccccccc aaggttcccc ccccc

26

<210> 64

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> immunomodulatory oligonucleotide

<400> 64

ccccccccc atggttcccc ccccc

26

<210> 65

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223>	immunomodulatory oligonucleotide	
<400>	65	
	cccccccccc acggttcccc ccccc	26
<210>	66	
<211>	26	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	66	
	cccccccccc aagtttcccc ccccc	26
<210>	67	
<211>	26	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	67	
	cccccccccc atgtttcccc ccccc	26
<210>	68	
<211>	26	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	68	
	cccccccccc acgtttcccc ccccc	26
<210>	69	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	69	
	tgactgtgaa gcttagagat ga	22
<210>	70	
<211>	22	
<212>	DNA	

<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	70	
	tgactgtgaa gctcagagat ga	22
<210>	71	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	71	
	tgactgtgaa gcctagagat ga	22
<210>	72	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	72	
	tgactgtgaa gcccagagat ga	22
<210>	73	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	73	
	tgactgtgag gcttagagat ga	22
<210>	74	
<211>	22	
<212>	DNA	
<213>	Artificial Sequence	
<220>		
<223>	immunomodulatory oligonucleotide	
<400>	74	
	tgactgtgag gctcagagat ga	22

<210> 75  
<211> 22  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> immunomodulatory oligonucleotide  
  
<400> 75  
tgactgtgag gcctagagat ga 22

<210> 76  
<211> 22  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> immunomodulatory oligonucleotide  
  
<400> 76  
tgactgtgag gccagagat ga 22

<210> 77  
<211> 22  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> immunomodulatory oligonucleotide  
  
<400> 77  
tgactgtgga gcttagagat ga 22

<210> 78  
<211> 22  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> immunomodulatory oligonucleotide  
  
<400> 78  
tgactgtgga gctcagagat ga 22

<210> 79  
<211> 22  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> immunomodulatory oligonucleotide  
  
<400> 79

tgactgtgga gcctagagat ga

22

<210> 80

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> immunomodulatory oligonucleotide

<400> 80

tgactgtgga gccagagat ga

22

<210> 81

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> immunomodulatory oligonucleotide

<400> 81

tgactgtggg gcttagagat ga

22

<210> 82

<211> 22

<212> DNA

<213> Artificial Sequence

<220>

<223> immunomodulatory oligonucleotide

<400> 82